ATLIS Wireless LLC
Telesaurus VPC LLC
AMTS Consortium LLC
Telesaurus Holdings LLC
Skybridge Spectrum Foundation
Intelligent Transportation Wireless LLC

www.telesaurus.com
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Advanced Transportation Location & Information Service • ATLIS • Berkeley CA

Ex parte presentations

April 14, 2008

Marlene Dortch
FCC, Office of Secretary
445 12th Street, SW
Washington, DC 20054

Re: WT 06-49: the *LMS-M ITS Radio Service* NPRM.

Attached hereto is a copy of a progress report from University of California Center for Innovative Transportation (CCIT) regarding the collaborative research program of CCIT and our LLCs and Foundation, centered around use of LMS-M spectrum for wide-area ITS wireless, with high-accuracy vehicle location, throughout the United States.

This is a written presentation, by filing in the docket on ECFS, to further supplement the record on these matters. [1] These filings demonstrate the critical and growing need for ITS wireless in the nation, the steady progress toward implementation, and for these the requirement to not reduce the authorized power or time of use or make other changes to the current LMS-M rules adverse to the ITS and the ITS purpose of the rules.

These matters are topics of meetings scheduled at the end of this month at the FCC, NTIA, other federal agencies, United Telecom Council, and other DC-based telecom organizations.

Respectfully,

/s/
Warren Havens
President,
ATLIS Wireless LLC,[2]
Telesaurus Holdings GB LLC
Skybridge Spectrum Foundation
and their affiliates listed above
2649 Benvenue Ave. #2-6
Berkeley, CA 94704 (510) 841 2220

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[1] See, e.g, the numerous filings in this docket by Telesaurus-Skybridge, and in support thereof, ITS America, ITS California, University of California-CCIT, and Professor Raja Sengupta. See also www.telesaurus.com, including page on ITS Solutions, and www.tetra-us.us (some pages discuss ITS use of TETRA).

[2] ATLIS Wireless LLC was formed in 2007 to provide operational services to the other entities listed above including Telesaurus Holdings GB LLC that holds LMS licenses nearly nationwide, and also assists Skybridge Spectrum Foundation that also holds LMS licensees nearly nationwide.

April 11th, 2008

Subject: Status of Telesaurus-sponsored research at the California Center for Innovative Transportation

To Whom It May Concern:

It is my pleasure to write this letter and present the current status of engineering and economic studies conducted by the California Center for Innovative Transportation (CCIT) in the area of wide-area wireless services for Intelligent Transportation Systems (ITS), under sponsorship from Telesaurus, LLC. CCIT was founded jointly by the University of California, Berkeley and the California Department of Transportation. Its mission is to accelerate the implementation of research results and the deployment of technical innovations by transportation practitioners.

CCIT has been under contract with Telesaurus since April, 2007. Academic guidance is provided by UC Berkeley's Civil and Environmental Engineering Professor Raja Sengupta, whose research focus in on control theory and systems engineering applied to large-scale information technology architectures. As CCIT's Associate Director, I oversee CCIT's technical activities and supervise its engineering team, including on our Telesaurus-sponsored projects.

Our investigations aim to instruct the implementation of a plan set forth by Telesaurus and the Skybridge Spectrum foundation to deploy a nationwide wireless network for high-accuracy location services and other ITS-related applications. We have covered the following topics to date:

- A taxonomy of network services and applications that could be offered by a wide-area wireless network for ITS;
- An overview of existing and planned wireless services that provide vehicular applications;
- A technical review of design options for the provision of three core services: broadcast, two-way communications, and Position, Navigation, Timing (PNT) signals.
- An initial business assessment of a wide-area wireless network for ITS by evaluating its market potential, estimating its financial and non-financial benefits and costs, prioritizing uses for the network, and recommending a go-to-market approach for implementation.

An overview of the first three investigations was presented at the 14th World Congress on Intelligent Transportation Systems in Beijing last October [1]. We have also submitted an overview of the fourth investigation to the 15th World Congress on Intelligent Transportation Systems in NY, which is going to be held in New York in November 2008 [2].

Pr. Sengupta is a recognized expert in the areas of transportation systems, wireless networking and vehicle navigation. He has led multi-million dollar research efforts for state and federal agencies, and is participating in the national Vehicle-Infrastructure Integration research program. Pr. Sengupta has also been receiving funding from General Motors to investigate vehicle-to-vehicle connectivity and Cooperative Vehicle Safety (CVS) concepts.

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In Pr. Sengupta's opinion, the prospect of providing PNT services from terrestrial pseudolites to supplement GPS carries considerable interest. In particular, for CVS system, lane discrimination level of positioning accuracy is required, which is not achievable with stand-alone GPS and even integration of DGPS and Vehicle Sensors (DGPS/VS) [3]. The availability of reliable, high-precision location capabilities can enable a host of applications, like CVS, in the transportation industry as well as in other sectors of the economy. Pr. Sengupta has set a research agenda to explore this concept further. Pr. Kannan Ramchandran, a Professor in the Department of Electric Engineering at UC Berkeley and a faculty member of the Berkeley Wireless Group, is also associated in the effort.

ITS applications, in particular safety and real time traffic estimation, require sub-meter accuracy in order to ensure lane discrimination capability. This is the core wireless service that the Telesaurus-Skybridge plan targets for US nationwide deployment. Substantial progress in the field of high-accuracy wireless location technologies is offering good prospects for the feasibility of that plan. There are commercial solutions available that can achieve centimeter and millimeter position accuracies in a local area. *Novariant Inc.* (www.novariant.com) and *Locata Technology* (based in Australia) are two companies that have implemented the pseudolite concept. Article [3] presents results that verify the centimeter-level accuracy of such a system. Telesaurus and CCIT have jointly approached several companies that may have a role to play in either the design or the implementation of a wide-area wireless network for ITS. Those include ESRI, a leading company in the Geographical Information Systems sector who has shown significant interest, as well as Lyrtech and Elektrobit, both wireless components design firms.

I hope that the information provided above is an adequate description of the nature of the work conducted by CCIT with sponsorship from Telesaurus, and that, in turn, this sets a clear picture of what that sponsor is trying to accomplish. I cordially invite you to contact me with any questions you may have about it.

Sincerely,

J.D. Margulici, Associate Director

[1] Saneesh Apte, J.D. Margulici, Warren Havens, "*Wide Area Wireless Networks*", In Proc. 14th ITS World Congress, Beijing, China, 2007.

[2] J.D. Margulici, "*Wide Area Wireless Networks Business Concept*", Submitted to 15th ITS World Congress, NY, 2008.

[3] Shahram Rezaei, Raja Sengupta, "*Kalman Filter Based Integration of DGPS and Vehicle Sensors for Localization*", IEEE Transaction on Control Systems Technology, Vol. 15, No. 6, pp. 1080-1088, 2007.

[4] Joel Barnes, Chris Rizos, et. al., "*High Precision Indoor and Outdoor Positioning Using LocataNet*", International Symposium on GPS/GNSS, Tokyo, Japan, 2003.